doi: 10.1111/j.1369-7625.2012.00765.x

A cross-sectional assessment of health-related quality of life (HRQoL) among hypertensive patients in Pakistan

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Accepted for publication
2 January 2012

Keywords: educational level, health-related quality of life, hypertension

Abstract

Objective To describe the health-related quality of life (HRQoL) profile of hypertensive population in Pakistan.

Methods A cross-sectional descriptive study was undertaken with a cohort of 385 hypertensive patients attending two public hospitals in Quetta city, Pakistan. The EuroQoL EQ-5D scale was used for the assessment of HRQoL. EQ-5D is a standardized instrument for use as a measure of health outcome and is used in the clinical and economic evaluation of health care as well as population health surveys. The HRQoL was scored using values derived from the UK general population survey. $P \leq 0.05$ was taken as significant.

Results Two hundred and sixty-five (68.85%) respondents were men with 3.01 ± 0.939 years of history of hypertension. Majority (n = 186, 48.3%) were categorized in age group of 28–37 years with mean age of 39.02 ± 6.596. Education, income and locality had significant relation with HRQoL score. HRQoL was measured poor in our study patients (0.4674 ± 0.2844).

Conclusion Hypertension has an adverse effect on patients' well-being and HRQoL. Results from this study could be useful in clinical practice, particularly in early treatment of hypertension, at point where improving HRQoL is still possible.

Introduction

The development of chronic conditions with established decreased life expectancies is very disturbing for the patients.[1] The complex nature of diseases has stressful effect on social and economical status of the patients.[2] Even in the 'controlled status' the feeling of being ill heavily imbalances the quality of life (QoL) resulting in the decreased patients' satisfaction with daily life

activities.[3] It is believed that promoting health activities and supporting the health-related domains can improve the patient's perception of being ill and QoL.[4] Therefore, health-related quality of life (HRQoL) is an important tool in the assessment of treatment outcomes.[5]

The concept of HRQoL is used by health-care professionals to measure factors other than illness affecting human health and its status. This will help in predicting different dimensions within the patient's life and helps health-care professionals to understand patient perceptions of illness.[6] Compared to QoL that focuses perceptions of peoples' position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns,[7] HRQoL discusses domains that are specific to health and are influenced by certain factors like physiological, psychosocial, sociological, economical and spiritual. HRQoL therefore can be defined as 'person's perceived quality of life representing satisfaction in those areas of life likely to be affected by health status'.[6]

In the context of chronic diseases, hypertension (HTN) is counted as one of the major factors in decreasing life expectancy. It results in the development of further cardiac abnormalities such as myocardial infarction, stroke, heart failure and kidney failure, thus increasing the overall rate of morbidity and mortality.[8] The expensive treatments, comorbidities associated with HTN and the fear of developing further life-threatening conditions have a negative influence on patients' daily life activities and result in a decreased self-confidence.[9] Therefore, it is hypothesized that patients suffering from HTN do experience limited or low HRQoL.

Shifting our concerns to the health-care system of Pakistan, the concept of HRQoL is new, and to the best of our knowledge, there is not a single study available describing HRQoL status among Pakistani population. Therefore, this pioneer study in the Pakistani health settings aimed to evaluate the HRQoL of hypertensive patients to get a clear view of the present health status of hypertensive patients.

Methods

Study design, settings and recruitment of subjects

A questionnaire-based cross-sectional study was conducted to explore HRQoL among hypertensive patients. HTN has a prevalence rate of 18%[10] in Pakistan; therefore, a prevalence-based sample of 385 patients[11] was selected from two tertiary care hospitals in Quetta, Pakistan (Sandamen Provisional Hospital and Bolan Medical Complex Hospital). Both of these public institutes have the major population burden from all over the province of Balochistan.

The inclusion criteria were as follows: (i) patients of age 18 years and above, (ii) confirmed diagnosis of primary hypertension, (iii) using antihypertensive agents for the last 6 months and (iv) familiarity with the national language of Pakistan (Urdu). Immigrants from other countries, pregnant ladies and patients with comorbidities were excluded from the study. The study was conducted from July 2010 to September 2010.

Ethical approval and informed consent

As there is no human ethical committee for non-clinical studies in the said institutes, permission from the respective medical superintendent was taken. Patients who agreed to participate were explained the nature and the objectives of the study. Written consent was taken prior to data collection with signature of the patients and followed by the verification of the pharmacist working in cardiac units. The patients were made secure of the confidentiality of their responses and their right to withdraw from the study with no penalty or effects on their treatment.

Data abstraction

The EuroQoL EQ-5D scale was used to measure HRQoL in hypertensive patients. The EQ-5D instrument is a generic HRQoL instrument developed by the EuroQoL group. It consists of five dimensions that are further divided into

three levels of severity. It is a standardized instrument for use as a measure of health outcome and provides a simple descriptive profile and a single index value for health status that can be used in the clinical and economic evaluation of health care as well as population health surveys.[12] EQ-5D descriptive consists of five dimensions (mobility, self-care, usual activities, pain/discomfort and anxiety/depression) each of which can take one of three responses. The responses record three levels of severity (no problems/some or moderate problems/extreme problems) within a particular EQ-5D dimension. Visual analog scale (VAS) is the other portion of EQ-5D consisting of a 20-cm health thermometer with two distinct end points, the best imaginable health state (score of 100) and the worst imaginable health state (score of 0). This information can be used as a quantitative measure of health outcome as judged by the individual respondents. EQ-5D is applicable to a wide range of health index values for health status. It is easy to administer and is cognitively undemanding, taking only a few minutes to complete. The Urdu (national language of Pakistan) version of EQ-5D was provided by Euroqol on demand, and the study was also registered with Euroqol. EQ-5D is a self-administered instrument, but four pharmacists were also trained to use the tool by the research team. The pharmacists helped in getting data from those patients that had difficulty in understanding the questions. Focus group discussions were continuously held between the pharmacists and research team to maintain rational of the data collection process.

Statistical analysis

Descriptive statistics were used to describe demographic and disease characteristics of the patients. Percentages and frequencies were used for the categorical variables, while means and standard deviations were calculated for the continuous variables. The characteristics of the whole sample were presented. Mann–Whitney and Kruskal–Wallis tests were used to test the significance among variables. $P \leq 0.05$ was taken as significant. Bonferroni adjustment was performed to detect the intergroup significance. EQ-5D was scored using values derived from the UK general population survey reported in 1995. All analyses were performed using SPSS version 16.0 (SPSS Inc., Chicago, IL, USA).

Results

Patient's demographics

The demographic characteristics of the study patients are presented in Table 1, including the frequency distribution of the study patients and

Table 1 Characteristics of survey respondents (n = 385)

Characteristics	Frequency	%
Age (mean ± SD) = 39.02 ± 6.60		
18–27	48	12.5
28–37	186	48.3
38–47	128	33.2
> 48	23	6.0
Gender		
Male	265	68.8
Female	120	31.2
Education		
Illiterate	9	2.3
Religious	62	16.1
Primary	7	1.8
Matric	51	13.2
Intermediate	51	13.2
Bachelors	154	40.0
Masters	51	13.2
Occupation		
Jobless	97	25.2
Government official	78	20.3
Private job	134	34.8
Businessman	76	19.7
Income*		
Nil	97	25.2
< Pakistan Rupees 5000	2	0.5
5000–10 000	22	5.7
10 000–15 000	104	27.0
> 15 000	160	41.6
Locality		
Urban	289	75.1
Rural	96	24.9
Duration of disease (Mean ± SD) = 3.01 ± 0.939		
< 1 year	26	6.8
1–3 years	89	23.1
3–5 years	124	32.2
> 5 years	146	37.9

*1 Pk Rs = 0.01172 $US

disease-related data. The mean age (SD) of the patients was 39.02 (6.60) years, with 68.8% men. The mean (SD) duration of hypertension was 3.01 ± 0.939 years. Forty percentage (n = 154) had bachelor level of education with 34.8% (n = 134) were working in private sector. Almost 41% (n = 140) had monthly income of more than Pakistan rupees (Pk Rs) 15 000 per month (1 Pk Rs = 0.01172 $US) with 75.1% ($n$ = 289) resident of urban area.

EQ-5D health status

Table 2 reflects the HRQoL scores in patients. EQ-5D was scored using values derived from the UK general population survey reported in 1995.[13] The mean EQ-5D descriptive score calculated was 0.4674 ± 0.284 and EQ-VAS score 63.970 ± 6.621. In addition, relationship between the demographic characteristics and HRQoL is also presented in Table 2. The

Table 2 Description of health-related quality of life (HRQoL) scores

Description	*N*	Mean EQ5D Score	Std deviation	Mean EQ-VAS	SD	*P* value
Age (39.02 ± 6.596)						
18–27	48	0.5913	0.18401	66.8	5.652	0.614
28–37	186	0.5007	0.25706	64.6	5.862	
38–47	128	0.4104	0.31491	59.8	7.160	
>48	23	0.2576	0.28444	63.9	6.621	
Gender*						
Male	265	0.4677	0.28194	64.0	6.466	0.705
Female	120	0.4669	0.29107	63.8	6.978	
Education**						
Illiterate	9	0.2543	0.33554	59.4	6.521	<0.001
Religious	62	0.3005	0.34637	60.6	6.744	
Primary	7	0.5583	0.18048	63.5	2.992	
Matric	51	0.4371	0.28744	64.5	7.245	
Intermediate	51	0.5231	0.25906	65.0	5.774	
Bachelors	154	0.5293	0.23171	64.8	6.130	
Masters	51	0.4835	0.28105	64.5	7.119	
Occupation**						
Jobless	97	0.4337	0.29882	63.2	7.077	0.015
Government official	78	0.4796	0.27688	64.4	7.011	
Private job	134	0.5295	0.23761	65.1	5.503	
Businessman	76	0.3886	0.32602	62.3	7.080	
Income**						
Nil	97	0.4337	0.29882	63.2	7.077	0.098
<Pk Rs 5000	2	0.4210	0.33234	65.0	7.071	
5000–10000	22	0.5628	0.19853	65.6	6.549	
10000–15000	104	0.5231	0.23856	65.2	5.841	
>15000	160	0.4392	0.30643	63.3	6.735	
Locality*						
Urban	289	0.5113	0.25466	64.9	6.156	<0.001
Rural	96	0.3356	0.32713	60.9	7.089	
Duration of disease** (3.01 ± 0.939)						
<1 year	26	0.5885	0.18203	67.0	4.976	0.703
1–3 years	89	0.5158	0.25582	65.3	6.335	
3–5 years	124	0.4738	0.26777	64.3	6.106	
>5 years	146	0.4110	0.31733	62.2	7.074	
Total Sample	385	0.4674	0.28444	63.9	6.621	

*Mann–Whitney test, **Kruskal–Wallis Test.

association between age and mean HRQoL was reported to be −0.317 ($P = 0.614$). In addition, the correlation between duration of disease and mean HRQoL was measured as −0.184 ($P = 0703$). There was no significant difference reported when gender, income and duration of disease were kept into consideration. On the other hand, significant difference was reported when education, locality and occupation were analysed ($P < 0.001$, $P = 0.015$ and $P < 0.001$, respectively). Bonferroni adjustment was used to investigate the significance among intergroup variables.[14] Further, it was revealed that in between the educational variable, illiterate group had significant relation with the primary, intermediate and bachelors level of education. In addition, significant difference was found in occupation where respondents with private jobs had significant relation with those who were jobless and government officials.

A total of 29 different EQ-5D health states were described by the patients. The majority of the participants ($n = 112$, 29.1%) indicated no problems in the second and third domain while moderate problems in first, fourth and fifth domain (mobility 'first', self-care 'second', usual activities 'third', pain/discomfort 'fourth' and anxiety/depression being 'fifth' domain). There was not a single patient who stated no problem in all five domains as shown in Table 3.

Table 3 Frequency of self-reported (EQ-5D) health states

Health state	*N*	% Total
11 112	1	0.3
11 122	21	5.5
11 123	4	1.0
11 222	39	10.1
11 223	8	2.1
11 232	2	0.5
11 233	1	0.3
12 122	12	3.1
12 222	6	1.6
21 112	6	1.6
21 121	1	0.3
21 122	112	29.1
21 123	12	3.1
21 132	8	2.1
21 212	1	0.3
21 222	37	9.6
21 223	13	3.4
21 232	18	4.7
21 233	9	2.3
22 122	11	2.9
22 123	5	1.3
22 212	1	0.3
22 222	17	4.4
22 223	8	2.1
22 231	1	0.3
22 232	11	2.9
22 233	18	4.7
22 322	1	0.3
22 323	1	0.3
Total	385	100

Within 29 different health states, majority ($n = 112$, 29.1%) stated moderate difficulty in the first, fourth and fifth domain, respectively, whereas they stated no difficulty in the second and third domain*.
*[(Mobility, self-care, usual activities, pain/discomfort and anxiety/depression) domains of HRQoL in order].

Discussion

From the results of our study, HRQoL in hypertensive patients was measured as poor. To the best of our knowledge, this is the first study in Pakistan evaluating HRQoL. Thus, there are no cross-reference studies available. However, results from other areas do support our claim. Taichman *et al.*[15] reported that HRQoL is severely impaired in patients suffering from pulmonary hypertension. In another study of the same nature, it was concluded that patients with diabetes and those with hypertension reported comparably limited HRQoL as compared to healthy individuals.[16] Similar results were obtained while HRQoL was discussed in patients suffering from hypertension.[17,18]

HRQoL had a significant relationship with education, locality and income of our study participants. There are mixed results when our findings were compared with studies of same nature. Khosravi *et al.*[19] reported a significant relationship of education and income with HRQoL. However, Pappa *et al.*[20] highlighted age as the only factor that had significant relationship with HRQoL. In another study by Baune and Aljeesh[21], income and gender were the only variables that had significant relationship

with HRQoL, whereas Goins *et al.*[22] concluded that age, sex, education, annual household income, employment status, hypertension and obesity were significant to HRQoL.

The concept of HRQoL is fresh to the people of Pakistan. It is one part of social sciences that is often neglected by researchers in the area. Pakistan is the sixth most populous country in the world, and nearly 40 million still live below the national poverty line. Fifty percentage of the adult population is illiterate. One in 10 children dies before its fifth birthday. Every year 25 000–30 000 women die from complications of pregnancy and childbirth.[23] More importantly, differences in income per capita across regions have persisted or increased. Pakistan still faces formidable challenges (political, attitudinal and policy) to fully develop human capital, improve investment and increase productivity. Lack of human resources in health sector is counted as a major hurdle when it comes to delivery of optimal health care. Pakistan faces a severe shortage in number of professionals and in health-care facilities. In 2009, only eight physicians, one dentist and six nurses and midwifery were available for 10 000 of population. A total of six bed hospital and one primary care unit were present to serve for the same number of population. The total expenditure on health (per capita) was $24, with a government spending of $7 of the $24. A small amount of GDP (2.9%) was used on health expenditures hereby forcing the patient to spend a large amount in the form of out of pocket expenditure on health.[23] In addition, a survey report on public hospitals revealed that 90% of the patients were made to pay extra fee. Two-third of the patients complained about the uncaring and inhumane behaviour of the doctors, while another 80.7% complained that the doctors were not available because they were busy running their own clinics or hospitals. Moreover, there was no clean drinking water at 13% of the hospitals, and 12% of them had no waiting room for the patients.[24]

Lack of basic health facilities and resources, behavioural aspects and practices influence the patient in real-life scenario. In return, a large number of patients tend to move to other health-care providers prior to consulting certified practitioners. Prevalence of such entities affects the HRQoL to more extent than it is believed and often results in the development of resistance, hence increasing the cost of therapies and decreasing the HRQoL.

Conclusion

This study provides an initial evaluation of HRQoL in a representative sample of patients with hypertension. Our results showed an adverse impact of hypertension on patients' well-being and HRQoL. Adding to current knowledge, this is the first study that has been reported in the area. Results from this study could be useful in clinical practice, particularly in early treatment of hypertension, at point where improving HRQoL is still possible. We found that education, income and locality had marked impact on HRQoL in hypertensive patients. Among these variables, educating the patient is one of the appropriate choices to improve HRQoL. Patients' education and enhanced information can lead to better HRQoL in chronic diseases.

Health-care authorities have to provide ample facilities to the health-care system and to construct a continuous check and balance on the availability of these facilities. The unethical medicine practices are needed to be discouraged, and strong actions should be taken to ensure proper and rational availability of health services to the patients. Gaps between the patients and the health-care providers must be narrowed. Patients should be taught about the advantages of self-management of diseases, and the common perception of drugs being harmful in nature has to be eliminated. Future research on appropriate and targeted intervention in efforts to improve HRQoL of patients with hypertension is also recommended.

Limitations

The study is as an observational study on outpatients in public hospitals that are usually visited by low- to middle-income population. The high-

income group utilizes the facility usually in cases of emergency. Thus, the results of our research may not represent the entire population.

Acknowledgement

The authors thank the patients for participating in the study, and the hospital practice staff for their support in conducting the study.

Conflict of interest

None declared.

Funding

No funding was received for this study.

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